

REMARKS

The present application relates to hybrid maize plant and seed 39M27. Claims 1-32 are currently pending in the present application. Claims 5-11, 13-15, 17-19, 22-24, 26-28, and 30-32 have been amended. Applicant respectfully requests consideration of the following remarks.

SPECIFICATION

The Examiner notes that the accession numbers associated with the deposit of the inbred parental lines, disclosed at page 7 are blank. The Examiner also notes that inclusion of the accession number will overcome the objection. Applicant wishes to refrain from depositing these lines until indication of allowable subject matter and will amend the specification accordingly at his time.

CLAIM OBJECTIONS

The Examiner next objects to claims 1, 5, and 7 for the inclusion of a blank line where the ATCC accession number should be. The Examiner notes that inclusion of the number will overcome the objection. As provided in 37 CFR 1.801-1.809, applicant wishes to refrain from deposit of hybrid 39M27 until allowable subject matter is indicated. Upon such indication claims 1, 5, and 7 will be amended to include the accession number as suggested by the Examiner.

REJECTION UNDER 35 U.S.C. § 101

The examiner rejects claims 1-7, 9-16, 19, 20, and 22-32 under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1-13 of U.S. Patent No. 6,018,113. The Examiner notes that although the conflicting claims are not identical, they are not patentably distinct from each other. The Examiner further notes that the designation "39M27" does not distinguish the instantly claims seeds and plants from 39M27, as it appears to be an arbitrarily assigned designation. The Examiner concludes that insertion of the ATCC deposit number in claims 1, 5, and 7 will overcome the rejection.

While applicant does not agree that this rejection is appropriate, under 37 CFR 1.801-1.809, applicant will refrain from deposit of hybrid 39M27 until allowable subject matter is indicated. Once deposit is completed applicant will amend claims 1, 5, and 7 accordingly and this rejection will be moot.

REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

The Examiner notes that claims 8 and 21 are indefinite in their reference to male sterility in that it is unclear what plant is referenced. Each of claims 8 and 21 have been amended to indicate that the 39M27 plant has been manipulated to be male sterile.

Claims 1-32 stand rejected under 35 U.S.C. § 112, second paragraph, “as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.”

The Examiner notes that the recitation ”Hybrid maize seed designated 39M27” in claims 1, 5, and 7, render the claims and those dependent thereon indefinite. The Examiner states the that name “39M27” does not clearly identify the hybrid maize seeds and concludes that amending the claims to recite the ATCC deposit number would overcome the rejection. Applicants will refrain from amending the claim until the time of the actual deposit as set forth in 37 CFR 1.801-1.809.

Claims 5-7 stand rejected under 35 U.S.C. § 112, second paragraphs as indefinite for the recitation of “capable of expressing” in claims 5 and 7 renders these claims and those dependent thereon indefinite. The Examiner suggests the “capable of” be deleted from each claim. The Examiner is thanked for the suggestion and claims 5 and 7 have been so amended.

Claim 6 stands rejected for the limitation “or protoplasts” in line 1. The Examiner notes that there is insufficient antecedent basis for the limitation. The Examiner suggests that

the recitation "the cell or protoplasts being" in line 1 be replaced with --wherein cells or protoplasts are derived--. The Examiner is thanked for the suggestion and claim 6 has been so amended.

Claims 11, 15, 19, 24, 28, and 32 stand rejected and being indefinite because they do not indicate the "standards" against which the listed traits should be compared to determine the yield, root strength, drought tolerance, etc. The Examiner also notes that the categorization of the United States into the indicated regions appears arbitrary, as well as the term "particularly". Each of these claims have been amended to indicate a reference plant of claim 39M27 stating that is trait is "not significantly different than" 39M27 at 5% significance when grown in the same environmental conditions. This provides a reference plant as well as a statistical measure by which the trait can be compared. With respect to the regions of the United States, applicant submits that this is a term of art for plant breeders and the meaning to those of skill in the art is clear. Finally the term "particularly" has been removed from the claims.

Claims 9, 12, 17, 22, 26, and 30 stand rejected under 35 U.S.C. § 112 as indefinite. These claims are drawn to a methods for developing a maize plant in a plant breeding program, and the claim indicate that the maize plant, or its parts, would be used as a source of breeding material. Examiner notes that the claims do not set forth any specific method steps with regard to how the maize plant or parts would be developed. Claims 9, 12, 17, 22, 26, and 30 have been amended to recite the methods steps of "obtaining the maize plant" and "employing" plant as a source of breeding material. It is submitted that these steps alleviate the Examiners rejection.

Claims 10, 14, 18, 23, 27, and 31 stand rejected as indefinite. The Examiner states that the claimed invention is directed to nonstatutory subject matter. The Examiner notes that the claims are drawn to a "maize plant breeding program" of the claim from which they depend, whereas those claims are drawn to a method. The Examiner suggests that the

recitation "The maize plant breeding program" be replaced with --The method--. The examiner is thanked for the suggestion, each of claims 10, 14, 18, 23, 27, and 31 have been amended to properly refer to a "method" rather than a breeding program.

REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

Claims 1-32 stand rejected under 35 U.S.C. § 112 first paragraph, the Examiner next reiterates the requirements for the statement of deposit in a specification. With regard to deposit of Hybrid 39M27, Applicant wishes to note that:

- a) during the pendency of this application access to the invention will be afforded to the Commissioner upon request;
- b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;
- c) the deposit will be maintained in a public depository for a period of thirty years, or five years after the last request for the enforceable life of the patent, whichever is longer;
- d) a test of the viability of the biological material at the time of deposit will be conducted (see 37 C.F.R. § 1.807); and
- e) the deposit will be replaced if it should ever become inviable.

Applicant wishes to state that the actual ATCC deposit will be delayed until the receipt of notice that the application is otherwise in condition for allowance. Once such notice is received, an ATCC deposit will be made, and the claims will be amended to recite the ATCC deposit number. In addition, Applicant submits that at least 2,500 seeds of Hybrid 39M27 will be deposited with the ATCC.

Issues Under 35 U.S.C. § 102/103

Claims 1-32 stand rejected under 35 U.S.C. §102(e) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Weber (US Patent No 6,018,113). The Examiner concludes that amendment of claims 1, 5, and 7 to include ATCC numbers will overcome the rejection for claims 1-10, 12-14, 16-18, 20-23, 25-27, and 29-31. Applicant

will amend the claims accordingly upon indication of otherwise allowable subject matter.

Claims 11, 15, 19, 24, 28, and 32, however, as noted by the Examiner will remain rejected after amendment. The Examiner notes that these claims are still taught by Weber as cultivar 39M27 has at least two of the characteristics of the 39M27 listed in those claims. The Examiner concludes that the process of making the claimed plants does not distinguish the plants themselves from those taught by the reference, concluding that the invention was clearly "prima facie" obvious as a whole to one of ordinary skill in the art, if not anticipated by Weber.

Applicant respectfully traverses and requests reconsideration of claims 11, 15, 19, 24, 28, and 32 as amended herein. When looking at maize plants it would be possible to find many traits that are similar between varieties such as the disease resistance or growth habit. However, to say that there are similarities in phenotype between two varieties is not the same as saying that the two varieties had the same morphological and physiological characteristics as a whole, or that one is an obvious variant of the other. Further, similarity in phenotype does not mean that the two varieties will perform similarly, particularly in a breeding program.

Applicant submits that these claims do not simply recite traits, such as relative maturity, but instead recite these specific traits only to the extent that they are "39M27" traits. The claim also recites that the claimed plant must have 39M27 as an ancestor further indicating that these traits must originate from the 39M27 plant. Any phenotypic trait that is expressed in the claimed plants is a result of a combination of all of the genetic material present in the 39M27 plant, and 39M27 will have its own unique genetic profile that it will contribute to a breeding program. This unique genetic background will result in the claimed plant and this profile and its combination with other plants will result in a unique combined genetic profile that is the product claimed.

A plant with the combination of two of these traits is also not rendered anticipated or obvious from Weber. It would require undue experimentation to begin with the hybrid of 39M27 which has its own unique combination of traits to breed with it to recover a hybrid with at least two of the traits enumerated in claims 11, 15, 19, 24, 28, and

32. Further, there is no expectation of success that the crossing of the hybrid 39M27 with some yet to be identified plant would yield a plant with two of the traits enumerated in the claim. Each generation would bring a random combination of traits and there is no expectation that the claimed combination could be achieved at all. Without any teaching about dominance, or heritability of such traits it cannot be said that there is an expectation of success that the combination of plants would achieve the combination enumerated in the claim, to say nothing of issues such as inbreeding depression etc. The laborious process of breeding to generate a hybrid is disclosed in the specification and to assume that another hybrid can be bred to generate the same grouping of traits when is speculation at best.

It is impermissible to use hindsight reconstruction and the benefit of applicants disclosure to cherry pick among pieces which are present in the art, there must be some suggestion to make the combination and an expectation of success. In re Vaeck 20 U.S.P.Q.2d 1434 (Fed. Cir. 1991). As discussed above, 39M27 is clearly differentiated from 39M27. Further, plants derived from 39M27 are also clearly differentiated. It must be recognized that the 39M27-derived plants are themselves unusual and a nonobvious result of a combination of previously unknown and nonobvious genetics. In addition to the phenotypic traits described herein, each 39M27-derived plant has an additional benefit unique to each specific cross using 39M27 as one of its ancestors. Thus, they deserve to be considered new and nonobvious compositions in their own right as products of crossing when 39M27 is used as a starting material.

CONCLUSION

Applicant submits that, in light of the foregoing amendments and remarks, the claims, as amended, are in condition for allowance. Reconsideration and early notice of allowability are respectfully requested.

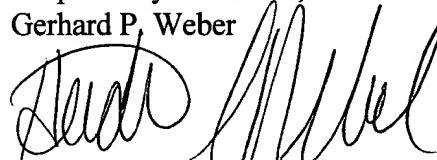
No fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Attached hereto is a marked-up version of the changes made to the specification and

claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Reconsideration and allowance is respectfully requested.

Respectfully submitted,
Gerhard P. Weber



Heidi S. Nebel, Reg. No. 37,719
ZARLEY, McKEE, THOMTE, VOORHEES
& SEASE
801 Grand Avenue, Suite 3200
Des Moines, Iowa 50309-2721
Phone No. (515) 288-3667
Fax No. (515) 288-1338
CUSTOMER NO: 22885
Attorneys of Record

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Application No. 09/490,476



**AMENDMENT — VERSION WITH MARKINGS
TO SHOW CHANGES MADE**

In the Claims

Please amend claims 5-11, 13-15, 17-19, 21-24, 26-28, 30-32 as follows:

5. (Amended)

A tissue culture of regenerable cells of a hybrid maize plant 39M27, representative seed of said hybrid maize plant 39M27 having been deposited under ATCC accession number _____, wherein the tissue regenerates plants [capable of] expressing all the morphological and physiological characteristics of said hybrid maize plant 39M27.

6. (Amended)

A tissue culture according to claim 5, [the cells or protoplasts being] wherein cells or protoplasts are derived from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

7. (Amended)

A maize plant, or its parts, regenerated from the tissue culture of claim 5 and [capable of] expressing all the morphological and physiological characteristics of hybrid maize plant 39M27, representative seed having been deposited under ATCC accession number _____.

8. (Amended)

The maize plant of claim 2 wherein said plant [is] has been manipulated to be male sterile.

9. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 2; and employing said plant or its parts as a source of said breeding material in a maize plant breeding program.

10. (Amended)

The [maize plant breeding program] method of claim 9 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

11. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 2, said maize plant capable of expressing a combination of at least two [39M27] traits which are not significantly different from 39M27 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of approximately 108 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, outstanding grain yield, excellent stalk strength, very good root strength, excellent stay green, exceptional drought tolerance, very good Anthracnose stalk rot resistance, very good Fusarium ear rot resistance, very good Gibberella ear rot resistance, and [particularly] suited to the Northwest, Northcentral, [Northeast] Northeast, Drylands and Central Corn Belt regions of the United States and to Canada.

13. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 12; and

employing said plant or its parts as a source of said breeding material in a maize plant breeding program.

14. (Amended)

The [maize plant breeding program] method of claim 13 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

15. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 12, said maize plant capable of expressing a combination of at least two [39M27] traits which are not significantly different from 39M27 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of approximately 108 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, outstanding grain yield, excellent stalk strength, very good root strength, excellent stay green, exceptional drought tolerance, very good Anthracnose stalk rot resistance, very good Fusarium ear rot resistance, very good Gibberella ear rot resistance, and [particularly] suited to the Northwest, Northcentral, [Northeast] Northeast, Drylands and Central Corn Belt regions of the United States and to Canada.

16. (Amended)

A hybrid maize plant according to claim 2, wherein the genetic material of said plant contains one or more genes transferred by backcrossing.

17. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant

breeding material, comprising: obtaining the maize plant, or its parts, of claim 16; and
employing said plant or its parts as a source of said breeding material in a maize plant
breeding program. as a source of said breeding material.

18. (Amended)

The [maize plant breeding program] method of claim 17 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

19. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 16, said maize plant capable of expressing a combination of at least two [39M27] traits which are not significantly different from 39M27 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of approximately 108 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, outstanding grain yield, excellent stalk strength, very good root strength, excellent stay green, exceptional drought tolerance, very good Anthracnose stalk rot resistance, very good Fusarium ear rot resistance, very good Gibberella ear rot resistance, and [particularly] suited to the Northwest, Northcentral, [Northeast] Northeast, Drylands and Central Corn Belt regions of the United States and to Canada.

21. (Amended)

The maize plant of claim 20 wherein said maize plant [is] has been manipulated to be male sterile.

22. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 20; and employing said plant or its parts as a source of said breeding material in a maize plant breeding program. as a source of said breeding material.

23. (Amended)

The [maize plant breeding program] method of claim 22 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

24. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 20, said maize plant capable of expressing a combination of at least two [39M27] traits which are not significantly different from 39M27 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of approximately 108 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, outstanding grain yield, excellent stalk strength, very good root strength, excellent stay green, exceptional drought tolerance, very good Anthracnose stalk rot resistance, very good Fusarium ear rot resistance, very good Gibberella ear rot resistance, and [particularly] suited to the Northwest, Northcentral, [Northeast] Northeast, Drylands and Central Corn Belt regions of the United States and to Canada.

26. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 25; and employing said plant or its parts as a source of said breeding material in a maize plant breeding program. as a source of said breeding material.

27. (Amended)

The [maize plant breeding program] method of claim 26 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

28. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 25, said maize plant capable of expressing a combination of at least two [39M27] traits which are not significantly different from 39M27 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of approximately 108 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, outstanding grain yield, excellent stalk strength, very good root strength, excellent stay green, exceptional drought tolerance, very good Anthracnose stalk rot resistance, very good Fusarium ear rot resistance, very good Gibberella ear rot resistance, and [particularly] suited to the Northwest, Northcentral, [Northeast] Northeast, Drylands and Central Corn Belt regions of the United States and to Canada.

30. (Amended)

A method for developing a maize plant in a maize plant breeding program using plant breeding techniques, which include employing a maize plant, or its parts, as a source of plant breeding material, comprising: obtaining the maize plant, or its parts, of claim 29; and employing said plant or its parts as a source of said breeding material in a maize plant breeding program. as a source of said breeding material.

31. (Amended)

The [maize plant breeding program] method of claim 30 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

32. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 29, said maize plant capable of expressing a combination of at least two [39M27] traits which are not significantly different from 39M27 when determined at a 5% significance level and when grown in the same environmental conditions, said traits selected from the group consisting of: a relative maturity of approximately 108 based on the Comparative Relative Maturity Rating System for harvest moisture of grain, outstanding grain yield, excellent stalk strength, very good root strength, excellent stay green, exceptional drought tolerance, very good Anthracnose stalk rot resistance, very good Fusarium ear rot resistance, very good Gibberella ear rot resistance, and [particularly] suited to the Northwest, Northcentral, [Northeast] Northeast, Drylands and Central Corn Belt regions of the United States and to Canada.